GE ELECTRONICS

6HA5
TRIODE

FOR VHF RF AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 6HA5 is a miniature triode designed particularly for service in VHF television tuners as a grounded-cathode rf amplifier.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC*	6.3±0.6	Volts
Heater Current‡	0.18	Amperes
Direct Interelectrode Capacitances§		
Grid to Plate: (g to p)	0.36	pf
Input: g to (h + k + i.s.)	4.3	pf
Output: p to (h + k + i.s.)	2.9	pf
Plate to Cathode: (p to k)	0.08	pf
Grid to Cathode: (g to k)	3.1	pf
Grid to Heater: (g to h), maximum	0.07	pf
Cathode to Heater: (k to h)	2.3	pf

MECHANICAL

Operating Position - Any
Envelope - T-5 1/2, Glass
Base - E7-1, Miniature Button 7-Pin
Outline Drawing - EIA 5-1

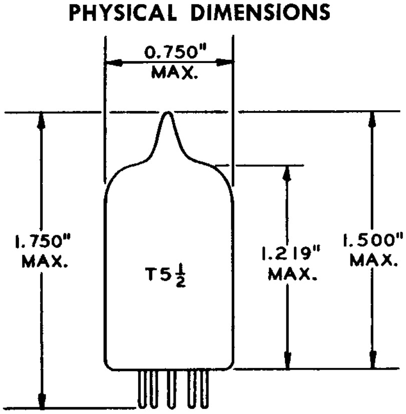
Maximum Diameter	0.750	Inches
Maximum Over-all Length	1.750	Inches
Maximum Seated Height	1.500	Inches

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Plate Voltage	220	Volts
Negative DC Grid Voltage	50	Volts
Plate Dissipation	2.6	Watts
DC Cathode Current	22	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	110	Volts
Heater Negative with Respect to Cathode	110	Volts
Grid Circuit Resistance	1.0	Megohms

PHYSICAL DIMENSIONS

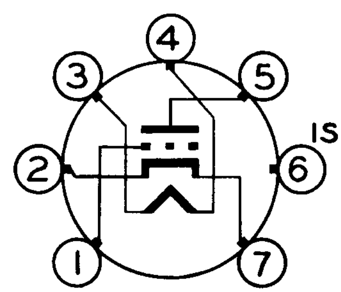


EIA 5-1

TERMINAL CONNECTIONS

Pin 1 - Grid
Pin 2 - Cathode
Pin 3 - Heater
Pin 4 - Heater
Pin 5 - Plate
Pin 6 - Internal Shield
Pin 7 - Cathode

BASING DIAGRAM



EIA 7GM

MAXIMUM RATINGS (Cont'd)

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage	135	135	135	Volts
Grid Voltage	-1.0	-2.7	-5.7	Volts
Plate Current	11.5	---	---	Milliamperes
Transconductance	14500	1500	150	Micromhos
Amplification Factor	72	---	---	
Input Conductance at 200 Mc	1500	---	---	Micromhos
Output Conductance at 200 Mc	200	---	---	Micromhos
Grid Voltage, approximate				
Ic = 0.3 Microamperes	---	-1.3	---	Volts

AVERAGE CHARACTERISTICS

Plate Supply Voltage	135	200	200	Volts
Plate Load Resistance	1000	4300	5600	Ohms
Cathode-Bias Resistor	0	0	87	Ohms
DC Grid Current	10	10	---	Microamperes
Plate Current	19	19	11.5	Milliamperes
Transconductance	20000	20000	14500	Micromhos
Amplification Factor	80	80	72	
Grid Voltage, approximate				
Gm = 1450 Micromhos	---	---	-3.8	Volts
Gm = 2000 Micromhos	-2.4	-3.3	---	Volts
Gm = 145 Micromhos	---	---	-8.1	Volts
Gm = 200 Micromhos	-5.3	-7.7	---	Volts

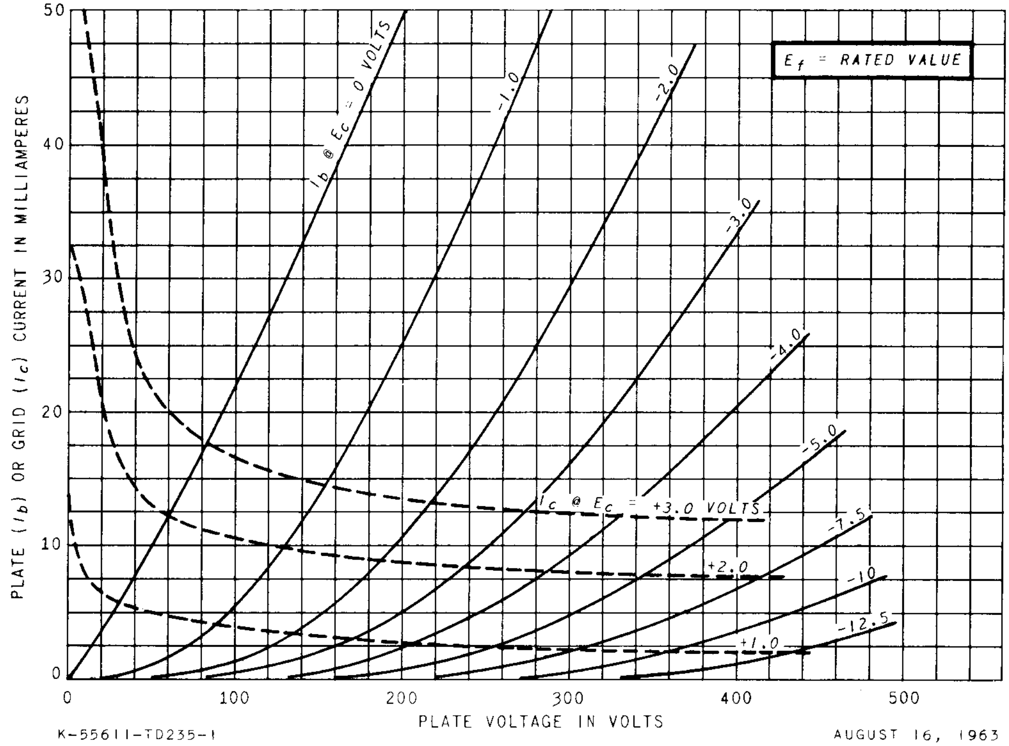
NOTES

* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

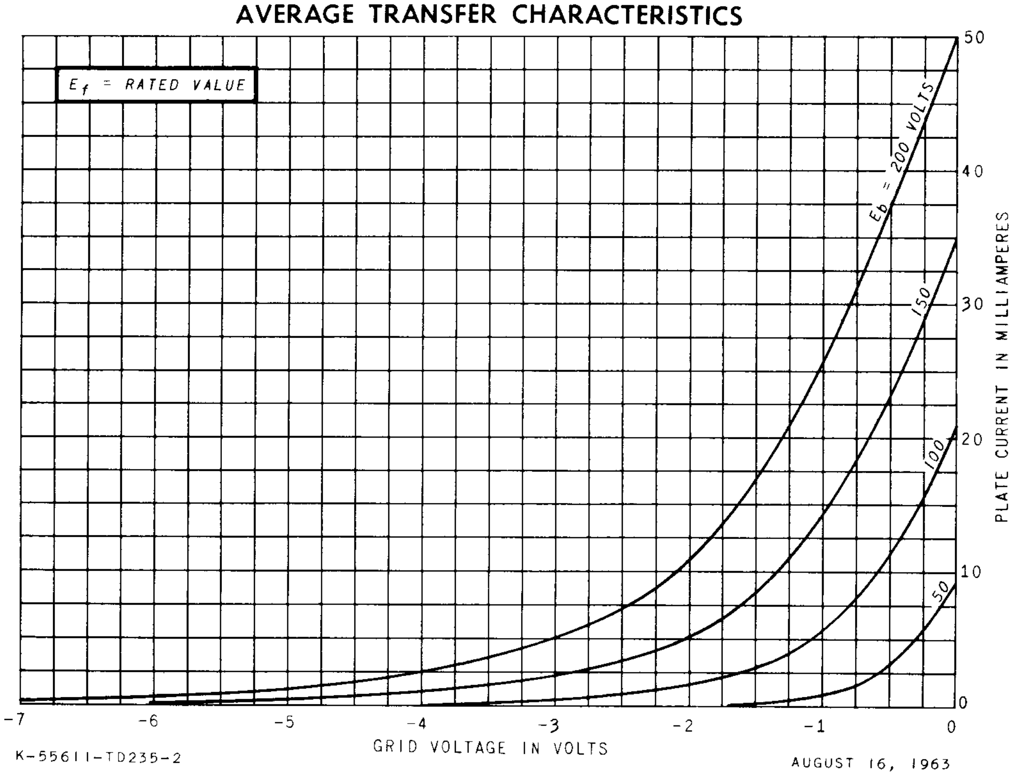
‡ Heater current of a bogey tube at Ef = 6.3 volts.

§ With external shield.

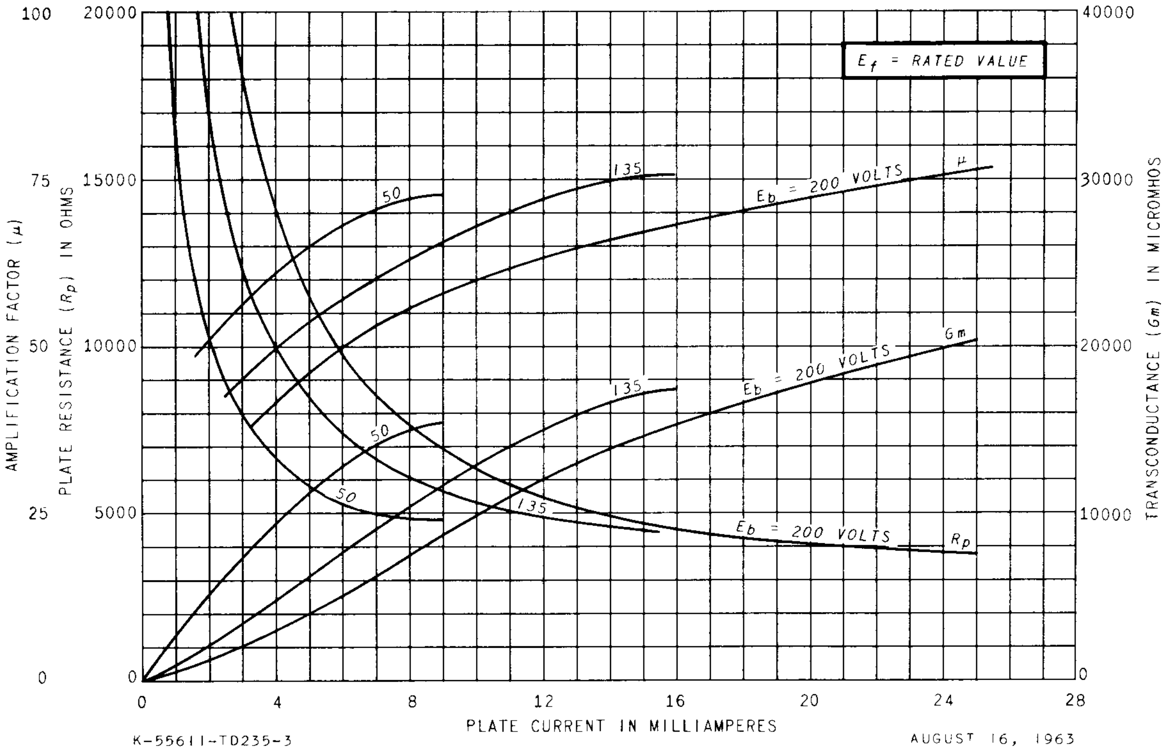
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS



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